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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,150	09/11/2003	Benjamin Meseguer	CH-7913/LeA 36,338	4989
34947	7590	06/06/2006	EXAMINER	
LANXESS CORPORATION 111 RIDC PARK WEST DRIVE PITTSBURGH, PA 15275-1112			ISSAC, ROY P	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/660,150	MESEGUER ET AL.	
	<b>Examiner</b>	Art Unit	
	Roy P. Issac	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

**NO EXTENSION, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) \_\_\_\_\_ is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) 1-27 are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_\_

## DETAILED ACTION

This application claims priority from foreign filed application, GERMANY 10242351.2, filed on 09/12/2002. Claims 1-27 are currently pending in this application.

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8 in part, drawn to compound of formula I wherein X is oxygen; and R<sub>1</sub> and R<sub>2</sub> may each independently be hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>1</sub>-C<sub>20</sub>-fluoroalkenyl or NR<sub>6</sub>R<sub>7</sub>, OR<sub>7</sub>, -(C<sub>1</sub>-C<sub>8</sub>-alkyl)-OR<sub>7</sub>, -(C<sub>1</sub>-C<sub>8</sub>-alkyl)-NR<sup>6</sup>R<sup>7</sup> or -O<sub>2</sub>CR<sup>7</sup>; and R<sub>6</sub> and R<sub>7</sub> are each independently C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylyalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or R<sup>6</sup> and R<sup>7</sup> together are a cyclic amino radical having a total of 4-20 carbon atoms; and R<sup>3</sup> and R<sup>4</sup> are each independently R<sup>12</sup>, OR<sup>13</sup> or NR<sup>14</sup>R<sup>15</sup> where R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup> are each independently C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or NR<sup>14</sup>R<sup>15</sup> together is a cyclic amino radical having 4-20 carbon atoms, or R<sup>3</sup> and R<sup>4</sup> together are -O-R<sup>16</sup>-O- where R<sup>16</sup> is a radical selected from the group of C<sub>2</sub>-C<sub>4</sub>-alkylene, 1,2-pheylene, 1,3-phenylene, 1,2-cyclohexylene, 1,1'-ferrocenylene, 1,2-ferrocenylene, 2,2'-(1,1-binaphthylene), 2,2'-(1,1')-biphenylene and 1,1'-(diphenyl-2,2'-methylene)diyl, and the radicals

mentioned may optionally be mono- or polysubstituted by radicals selected from the group of fluorine, chlorine, C<sub>1</sub>-C<sub>8</sub>-alkoxy and C<sub>1</sub>-C<sub>8</sub>-alkyl; and R<sup>5</sup> is hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>4</sub>-C<sub>24</sub>-aryl, C<sub>5</sub>-C<sub>25</sub>-arylalkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl or radical of the formula (IIb), classified in class 532, subclass 13.

II. Claims 1-8 in part, drawn to compounds of formula I wherein X is oxygen and R<sup>1</sup> and R<sup>2</sup> are each independently radicals of the formula (IIa); and R<sub>6</sub> and R<sub>7</sub> are each independently C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or R<sup>6</sup> and R<sup>7</sup> together are a cyclic amino radical having a total of 4-20 carbon atoms; and R<sup>3</sup> and R<sup>4</sup> are each independently R<sup>12</sup>, OR<sup>13</sup> or NR<sup>14</sup>R<sup>15</sup> where R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup> are each independently C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or NR<sup>14</sup>R<sup>15</sup> together is a cyclic amino radical having 4-20 carbon atoms, or R<sup>3</sup> and R<sup>4</sup> together are -O-R<sup>16</sup>-O- where R<sup>16</sup> is a radical selected from the group of C<sub>2</sub>-C<sub>4</sub>-alkylene, 1,2-phenylene, 1,3-phenylene, 1,2-cyclohexylene, 1,1'-ferrocenylene, 1,2-ferrocenylene, 2,2'-(1,1-binaphthylene), 2,2'-(1,1')-biphenylene and 1,1'-(diphenyl-2,2'-methylene)diyl, and the radicals mentioned may optionally be mono- or polysubstituted by radicals selected from the group of fluorine, chlorine, C<sub>1</sub>-C<sub>8</sub>-alkoxy and C<sub>1</sub>-C<sub>8</sub>-alkyl; and R<sup>5</sup> is hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>4</sub>-C<sub>24</sub>-aryl, C<sub>5</sub>-C<sub>25</sub>-arylalkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl or radical of the formula (IIb), classified in class 556, subclass 400.

III. Claims 1-8 in part, drawn to compounds of formula I wherein X is absent and R<sub>1</sub> and R<sub>2</sub> may each independently be hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>1</sub>-C<sub>20</sub>-fluoroalkenyl or NR<sub>6</sub>R<sub>7</sub>, OR<sub>7</sub>, -(C<sub>1</sub>-C<sub>8</sub>-alkyl)-OR<sub>7</sub>, -(C<sub>1</sub>-C<sub>8</sub>-alkyl)-NR<sup>6</sup>R<sup>7</sup> or -O<sub>2</sub>CR<sup>7</sup>; and R<sub>6</sub> and R<sub>7</sub> are each independently C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylyalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or R<sup>6</sup> and R<sup>7</sup> together are a cyclic amino radical having a total of 4-20 carbon atoms; and R<sup>3</sup> and R<sup>4</sup> are each independently R<sup>12</sup>, OR<sup>13</sup> or NR<sup>14</sup>R<sup>15</sup> where R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup> are each independently C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or NR<sup>14</sup>R<sup>15</sup> together is a cyclic amino radical having 4-20 carbon atoms, or R<sup>3</sup> and R<sup>4</sup> together are -O-R<sup>16</sup>-O- where R<sup>16</sup> is a radical selected from the group of C<sub>2</sub>-C<sub>4</sub>-alkylene, 1,2-pheylene, 1,3-phenylene, 1,2-cyclohexylene, 1,1'-ferrocenylene, 1,2-ferrocenylene, 2,2'-(1,1-binaphthylene), 2,2'-(1,1')-biphenylene and 1,1'-(diphenyl-2,2'-methylene)diyl, and the radicals mentioned may optionally be mono- or polysubstituted by radicals selected from the group of fluorine, chlorine, C<sub>1</sub>-C<sub>8</sub>-alkoxy and C<sub>1</sub>-C<sub>8</sub>-alkyl; and R<sup>5</sup> is hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>4</sub>-C<sub>24</sub>-aryl, C<sub>5</sub>-C<sub>25</sub>-arylalkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl or radical of the formula (IIb), classified in class 532, subclass 19.

IV. Claims 1-8 in part, drawn to compounds of formula I wherein X is absent and R<sup>1</sup> and R<sup>2</sup> are each independently radicals of the formula (IIa), and R<sub>6</sub>

and R<sub>7</sub> are each independently C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or R<sup>6</sup> and R<sup>7</sup> together are a cyclic amino radical having a total of 4-20 carbon atoms; and R<sup>3</sup> and R<sup>4</sup> are each independently R<sup>12</sup>, OR<sup>13</sup> or NR<sup>14</sup>R<sup>15</sup> where R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup> are each independently C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>5</sub>-C<sub>15</sub>-arylalkyl or C<sub>4</sub>-C<sub>14</sub>-aryl, or NR<sup>14</sup>R<sup>15</sup> together is a cyclic amino radical having 4-20 carbon atoms, or R<sup>3</sup> and R<sup>4</sup> together are -O-R<sup>16</sup>-O- where R<sup>16</sup> is a radical selected from the group of C<sub>2</sub>-C<sub>4</sub>-alkylene, 1,2-pheylene, 1,3-phenylene, 1,2-cyclohexylene, 1,1'-ferrocenylene, 1,2-ferrocenylene, 2,2'-(1,1-binaphthylene), 2,2'-(1,1')-biphenylene and 1,1'-(diphenyl-2,2'-methylene)diyl, and the radicals mentioned may optionally be mono- or polysubstituted by radicals selected from the group of fluorine, chlorine, C<sub>1</sub>-C<sub>8</sub>-alkoxy and C<sub>1</sub>-C<sub>8</sub>-alkyl; and R<sup>5</sup> is hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>4</sub>-C<sub>24</sub>-aryl, C<sub>5</sub>-C<sub>25</sub>-arylalkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl or radical of the formula (IIb), classified in class 556, subclass 465.

- V. Claim 9, drawn to a process for preparing compounds of the formula Ib, classified in class 532, subclass 19.
- VI. Claims 10-15, drawn to transition metal complexes, classified in class 532, subclass 562.
- VII. Claim 17, drawn to catalysts, classified in class 502, subclass 20.

VIII. Claims 18-25, drawn to preparation of stereoisomerically enriched compounds using transition metal catalysts, classified in class 502, subclass 20.

IX. Claim 26, drawn to compounds of formula XIV, classified in class 536, subclass 1.11.

X. Claim 27, drawn to compounds of formula XVIII, classified in class 536, subclass 122.

The inventions are distinct, each from the other because of the following reasons:

Groups I-IV and IX-X are independent and distinct from each other as they are drawn to compounds which have divergent moieties in the X position. Groups VI-VIII are independent and distinct from groups I-IV and IX-X as they are drawn to compounds which have divergent moieties complexed to them. Groups VI-VIII have various transition metals complexed to them while Groups I-IV and IX-X are free of transition metals.

Each of the groups in I-IV and IX-X is directed to or involves the use of compounds which have X groups that are recognized in the art as being distinct from one another because of their diverse chemical structure, their different chemical properties, modes of action, different effects, and reactive conditions. Additionally, the

level of skill in the art is not such that the invention would be obvious over the other, i.e., they are patentable over each other. Chemical structures which are similar are presumed to function similarly, while chemical structures which are not similar are not presumed to function similarly. The presumption even for similar chemical structures though is not irrefutable, but may be overcome by scientific reasoning or evidence showing that the structure of the prior art would not have been expected to function as the structure of the claimed invention. Note that in accordance with the holding of *Application of Papesch*, 50CCPA 1084, 315 F.2d 381, 137 USPQ 43 (CCPA 1963), and *In Re Lalu* 223 USPQ 1257 (Fed. Cir. 1984), chemical structures are patentably distinct where structures are either not structurally similar, or the prior art fails to suggest a function of a claimed compound would have been expected from a similar structure. The moieties of the various groups in the X position would not be expected to have similar functions, as such, the groups I-IV and IX-X are seen to be independent and distinct from each other.

Inventions III and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process can be used to synthesize products other than the claimed products in invention III. For example, the process can be practiced with varying groups at R<sup>1</sup>, R<sup>2</sup>, and R<sup>12</sup> positions.

Inventions VI-VII and VIII are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product as claimed can be used for a materially different process. For example, the transition metal complexes and catalysts containing transition metal complexes can be used to make products that are racemic.

The search for all inventions would place an undue burden on the examiner in view of the diversity of the group of compounds and the divergent fields of search.

Because the above set forth restriction/election requirement is complex, a telephone call to applicant's agent to request an oral election was not made. See MPEP § 812.01.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not

distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy P. Issac whose telephone number is 571-272-2674. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Patent Examiner  
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April 28, 2006



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